

Date: Thursday, 10/18/2007 8:04:00 AM  
 By: Kim Johnston

## Process Sheet

45

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : FWD X-TUBE EXT HEIGHT(-013)
Job Number : 35221	
Estimate Number : 10565	
P.O. Number : <u>NA</u>	Part Number : D205596105
This Issue : 10/18/2007 S.O. No. : <u>N/A</u>	Drawing Number : D205596105
Prsht Rev. : NC	Project Number : N/A
First Issue : <u>NA</u> Type : LANDING GEAR	Drawing Revision : A
Previous Run : 34164	Material : <u>NA</u>
Written By : <u>Kim Johnston</u>	Due Date : 11/5/2007 Qty: 1 Um: Each
Checked & Approved By : <u>Kim Johnston 10.18</u>	
Comment : Est Rev:D 05.03.21 Added bending procedure KJJ/JLM	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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KS 851 936  
07-10-27 (1)

Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile &amp; type labels per PPP D205-596-105 CHG002

W 5-12-08

2.0	D2889	FWD Crosstube
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2889 Aft Crosstube 35258

3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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SK/A 7-10-24



Comment: LANDING GEAR RESOURCE 1

Mark 23.92" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

4.0	QC15	DIMENSIONAL CHECK OF X-TUBES
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7-10-24 (1)



Comment: DIMENSIONAL CHECK OF X-TUBES

5.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-105

EL 7-10-24 JB 7-10-26

2-Deburr &amp; Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 10/18/2007 8:04:01 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 35221

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

07/10/31

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

ACM  
07-10-30 JD

Chemical Conversion Coat per QSI 005 4.1

8.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside with Immron per QSI 005 4.2

07-10-31

9.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

07-11-30

(1)

10.0

D2856600

Abrasion Strip



Comment: Qty.: 1.4895 f(s)/Unit Total : 1.4895 f(s)

Pick:

Qty Part number

Description

Batch

2 D2856-600(8.51")

Abrasion Strip

rubber strip 03595-063-450

B 35124

07-12-02

11.0

D28931

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description

Batch

2 D2893-1

Support

32779

07-12-02

12.0

MS2192024

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number

Description

Batch

4 MS21920-26

Clamp

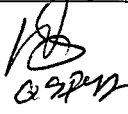
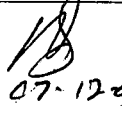
106119 07-12-04  
101810x2 103955x2

07-12-02

change to -24 07-12-03

PTO

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07-12-03	12	<del>MS21042</del> MS21920-26 stated in the DSI should be changed to MS21920-24 Permanent Change	MM	071204	4	 QSPM	 07-12-03

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: DD Date: 07/12/06  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 35221

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips per QSI 035 position using DT8582. Install supports and clamps per Dwg D205-596-105. Torque clamps to 80-100 in lb.

per DSF 9396  
see 24/12/06

per ECN 1075  
07.12.02

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

4/12/06 (1)

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-105

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

0

7/12/06 SCL (1+) 4

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

12/12/06

Job Completion



4/12.06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

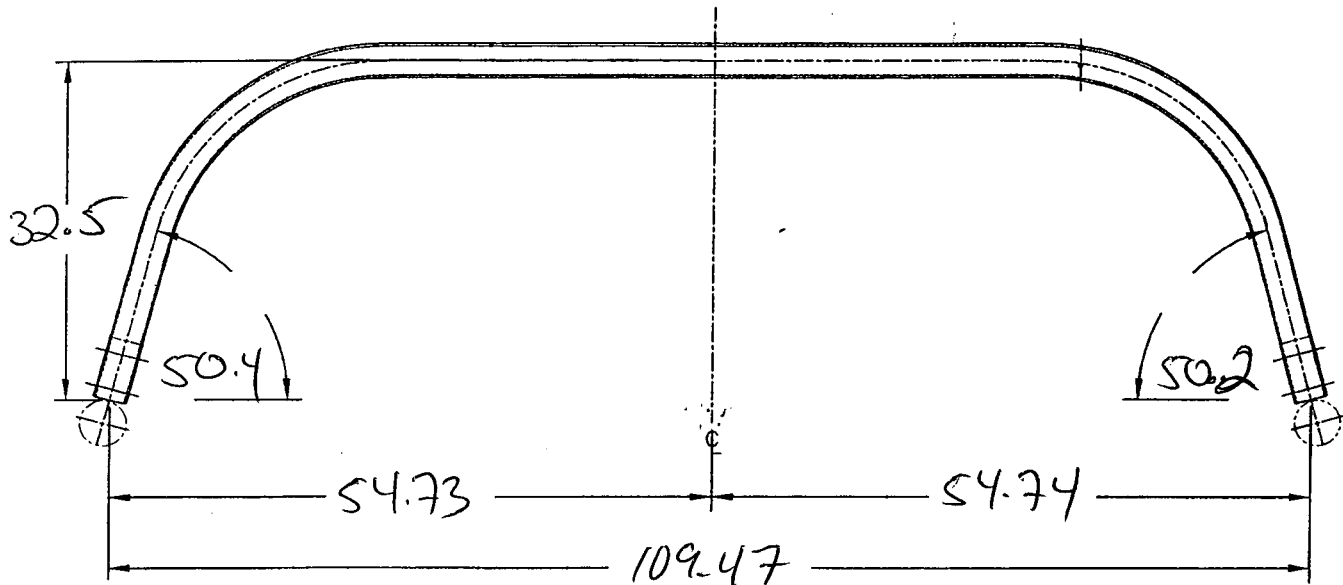
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 35221	
<b>Description:</b> Crosstube High-High Fwd	<b>Part Number:</b> D205-596-105	
<b>Inspection Dwg:</b> D205-596-105 <b>Rev:</b> A		<b>Page 1 of 1</b>

Required Dimension	Min	Max
Height	32.4	32.6
1/2 Span	54.6	54.8
Angle	49	52
Total Span	109.2	109.6

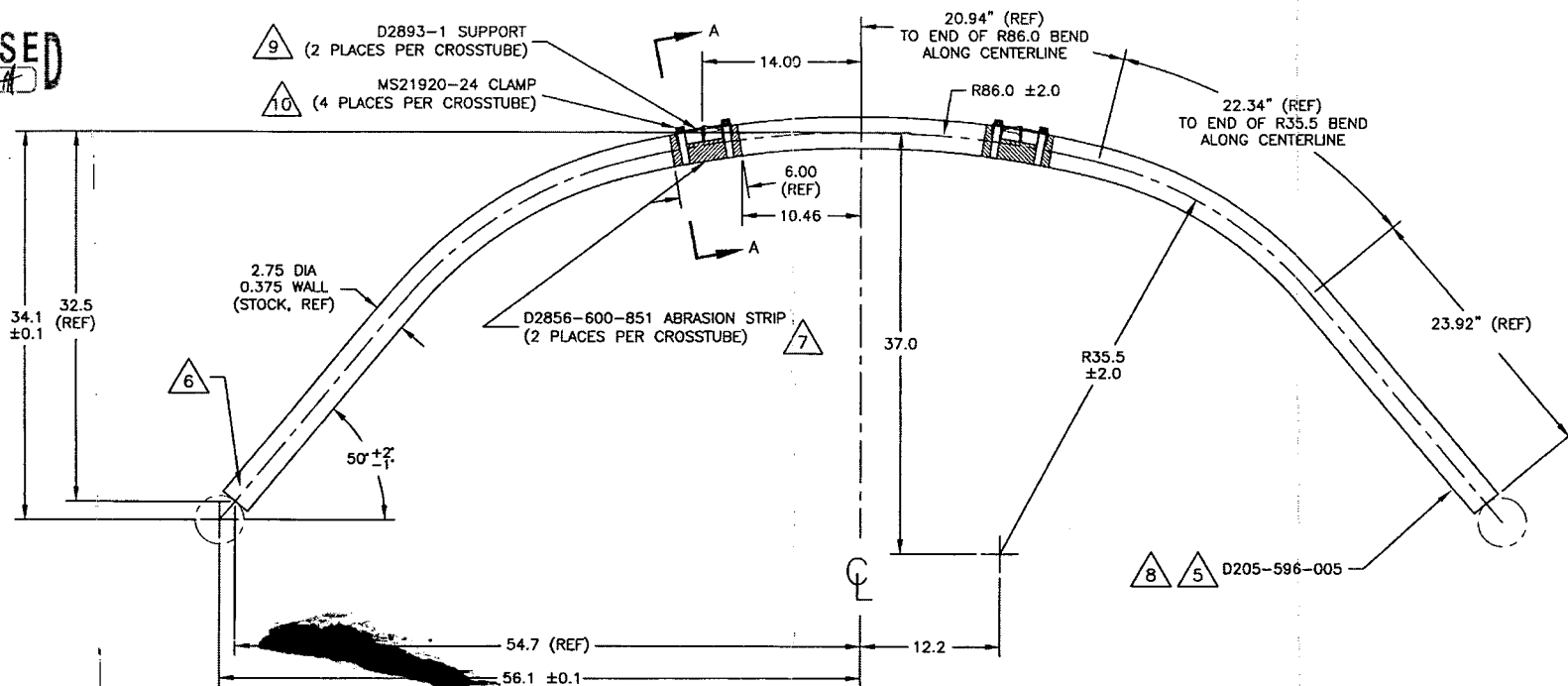


Comments

QC15 Inspection	<i>[Signature]</i>
Date	

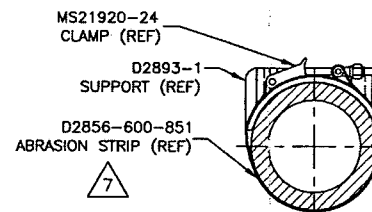
Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>

RELEASED  
02.11.21



GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURE FROM D6005-180  
FINISHED LENGTH = 134.40
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 6) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS
- 7) INSTALL D2856-600-851 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2893-1 SUPPORT, PER QSI 035
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005\" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) SEAL EDGES OF SUPPORTS USING SIKAFLEX-241/-291 SEALANT (OPTIONAL)
- 10) TORQUE CLAMPS 80 TO 100 IN-LB



SECTION A-A  
SCALE 2:5



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A	02.11.20	NEW ISSUE
DESIGN	DRAWN BY	<b>DART</b> DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D205-596-105
DATE	02.11.20	TITLE CROSSTUBE FWD EXTENDED
		REV. A SHEET 1 OF 1 SCALE 1:10

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WITHOUT NOTICE  
WORK ORDER  
NO. 35221



# DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D205-594 Rev. C (AND EARLIER) AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D205-594 Rev. 2 (AND EARLIER)  
REF. CANADIAN STC: SH03-6  
REF. FAA STC: SR01742NY

For D205-596-101/-103 Crosstubes (ref. 39" Landing Gear) or D205-596-105/-107 Crosstubes (ref. 31" Landing Gear) at CHG 002 or later, the D2856-600-851/-1009 Abrasion Strips have been removed, the D2893-1 and D2940-1 Supports have been bonded onto the crosstubes using Magnobond 6398 and D3595-063-450/-530 Rubber Cushions have been installed underneath the MS21920-26/-30 Clamps. Amend Parts List of IIN-D205-594 Section 5 and ICA-D205-594 Section 32.8 as follows:

## Remove:

QTY -101	QTY -103	QTY -105	QTY -107	Part Number	Description
2		2		D2856-600-851	ABRASION STRIP
4		4		MS21920-24	CLAMP
	2		2	D2856-600-1009	ABRASION STRIP
	4		4	MS21920-28	CLAMP

## Add:

QTY -101	QTY -103	QTY -105	QTY -107	Part Number	Description
4		4		D3595-063-450	RUBBER CUSHION
4		4		MS21920-26 <i>-25 BETTER</i>	CLAMP
	4		4	D3595-063-530	RUBBER CUSHION
	4		4	MS21920-30	CLAMP

To prevent the supports from shifting on D205-596-101/-103/-105/-107 Crosstubes at CHG 001, the D2893-1 or D2940-1 Supports should be removed and re-installed as follows:

- Follow section 32.1 of ICA-D205-594 for the removal of the crosstubes from the helicopter.
- Remove the MS21920-24/-28 Clamps that fasten the D2893-1 and D2940-1 Supports from the crosstubes per Section 32.3 of ICA-D205-594.
- Remove the D2856-600-851/-1009 Abrasion Strips from the crosstube per section 32.5 of ICA-D205-594.
- Inspect the crosstube surface underneath the supports for corrosion and mechanical damage per items 5.3.1 and 5.3.2 of the 300 hour inspection. Repair damage within acceptable limits and touch up finish per item 5.3.3 of the 300 hour inspection.
- Inspect the supports for corrosion and mechanical damage per items 5.3.4 of the 300 hour inspection. Repair damage within acceptable limits and touch up finish per item 5.3.4 of the 300 hour inspection.
- Abrade area to which support will be applied with 400 grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe area until there is no residue.
- Apply a 0.03" to 0.06" thick layer of Magnobond 6398 underneath D2893-1 or D2940-1 Supports and re-install the Supports on the crosstube as shown in Figure 1. Install a D3595-063-450/-530 Rubber Cushion on each MS21920-26/-30 Clamp. Position and secure the D2893-1 or D2940-1 Supports on the crosstube using MS21920-26/-30 Clamps. Torque clamps to 80-100 in-lb. Let the D205-596-101/-103/-105/-107 Crosstube Assembly cure before re-installing the crosstube on the aircraft.
- Re-install the D205-596-101/-103/-105/-107 crosstube per section 32.2 of ICA-D205-594.

CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

APPROVED

BY: *[Signature]*  
D. SHEPHERD (DE # 02)

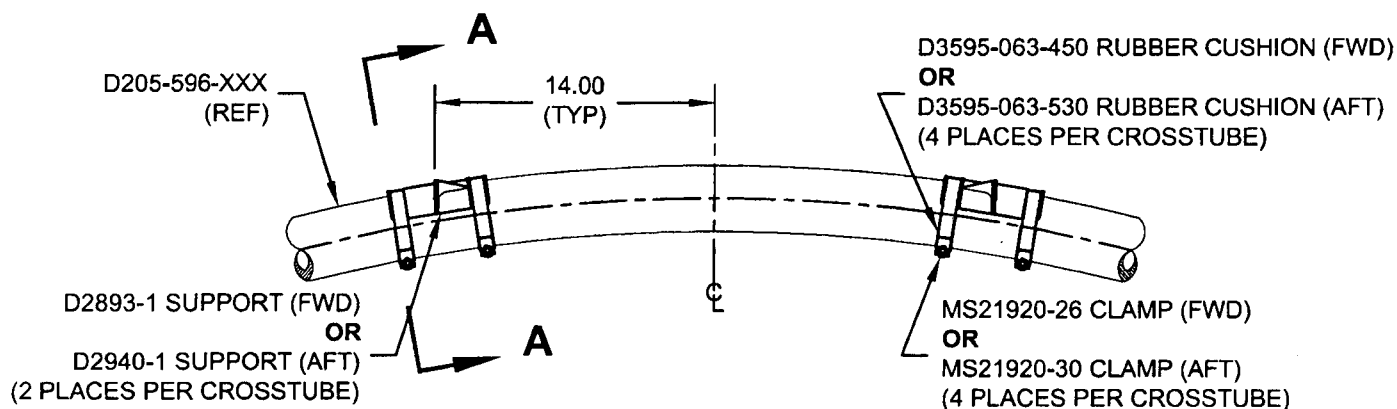
DATE: 07.11.16  
CERT. NO.: SH03-6  
ISSUE NO.: 3

A	NEW ISSUE	MB	07.11.16
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	DSI 9396	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE SUPPORT CHANGE	NTS
DATE	07.11.16	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

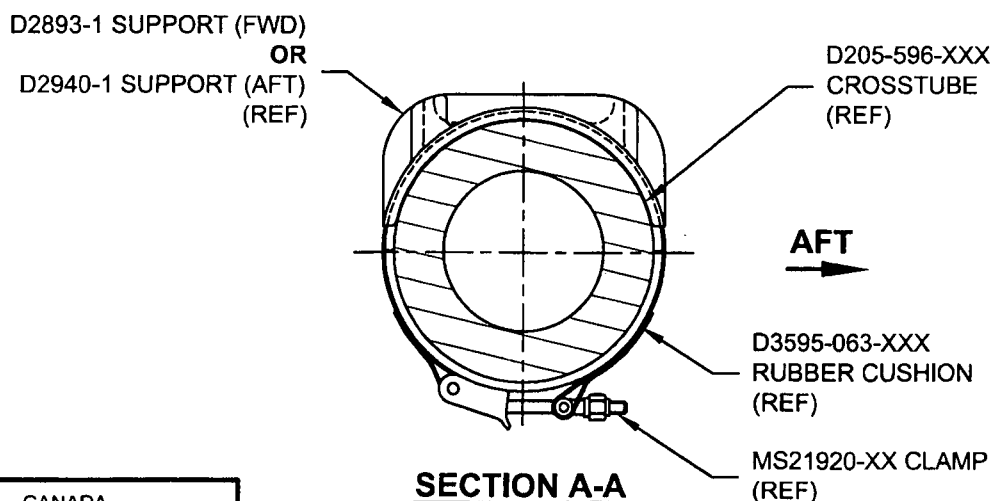
For customers who would like to upgrade their D205-596-101/-103/-105/-107 Crosstubes from CHG 001 to CHG 002, the following kits can be obtained from Dart:\_\_\_\_\_

### DSI 9396-XXX PARTS LIST

QTY -011	QTY -013	Part Number	Description
X		DSI 9396-011	FWD CROSSTUBE SUPPORT CHANGE (D205-596-101/-105 FWD CROSSTUBE)
	X	DSI 9396-013	AFT CROSSTUBE SUPPORT CHANGE (D205-596-103/-107 AFT CROSSTUBE)
4		D3595-063-450	RUBBER CUSHION
4		MS21920-26	CLAMP
	4	D3595-063-530	RUBBER CUSHION
	4	MS21920-30	CLAMP



**FIGURE 1: INSTALLATION OF SUPPORT ON CROSSTUBE**



CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01.

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DATE: 07.11.16  
CERT. NO.: SH03-6  
ISSUE NO.: 3

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DRAWN		HAWKESBURY, ONTARIO, CANADA
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MFG. APPR.	<i>[Signature]</i>	DSI 9396 SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE SUPPORT CHANGE NTS
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